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Method to the fabrication sealed note

thrower, in particular for automobiles the invention refers to a method to the fabrication of a sealed headlight with an outer bulb existing from a concave reflector and a transparent windshield, becomes arranged in which a lamp unit, existing from halogen a lamp and two metallic support members with lateral approaches, clamped on their squeezing foot, which supporting poles which can be taken up with their rear ends to capsule-shaped top caps of the reflector become fixed on.

With such headlights, which are certain for automobiles in particular, the incandescent lamp must become the achievement of directed light beams opposite the concave, in particular parabolic reflector adjusted.

With support members formed from the DE-OS 28 29 677 known headlight of this type also as clamping springs consists their approaches of u-shaped bent intermediate members, to which drahtförmige bent supporting poles welded are. The adjustment of the incandescent lamp opposite the reflector of the headlight made with the prior art method by the fact that the lamp unit before the insertion becomes into the reflector opposite this aligned, according to which with its rear ends in a receiving device of rotatable stored bent supporting poles in such a manner pivoted becomes, until their front ends affect an approach in each case, on which both parts become connected with one another. Subsequent one becomes the lamp unit with their so mounted supporting Poland into the capsule-shaped top caps of the reflector inserted and there soldered. This requires costly and complicated arranging equipment, which must be in the layer to accomplish the arranging procedure in three space coordinates with the headlight manufacturer.

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There in the practice the fabrication of the halogen lamp and its incorporation into the

headlight reflector at various locations made, exist the need to put to the headlight manufacturer a lamp unit already aligned at the disposal which can be begun without the mentioned arranging equipment in simple manner into the reflector.

Such lamp units with connected supporting Poland already are from the DE-OS 28 34 968 and 28 35 058 known. Here however relative large carrier plates for the halogen lamp are provided, which the central opposite the lamp wide it shields range of the reflector whereby light losses develop. The supporting poles fixed at the metallic carrier plates must be, up to one, electrically isolated. The supporting poles exceed far axial over the carrier plate, so that the lamp unit for its transport can be packed to the headlight manufacturer to only difficult so good that no bending the supporting poles made. Otherwise the layer of the lamp in the reflector would not tune no more.

The invention is the basis the object to create a method to the fabrication of a sealed headlight with which between the creation of a spatial compact lamp unit and their incorporation support-polarizes into the headlight reflector a damage practical excluded becomes.

This object becomes with a method initially mentioned type according to the invention dissolved by the fact that those draw first supporting poles opposite the reflector aligned and in its top caps set become, on which before at the approaches of their support members also connected as reference points for the layer of the Glühwendel opposite the front ends of the supporting poles and with it opposite the reflector serving reference members provided the lamp unit with these reference members becomes on the supporting poles fitted and then with them.

Here one proceeds thus from a directed lamp unit without supporting poles, so that lamp unit and first loose supporting poles damage-free separated packaged to become to be able. Aligning the supporting poles opposite the reflector adjusted in Dreipunktaufage can be accomplished with relative simple means in actual known manner. Here the supporting poles in an axial movable support are seized, which is in defined central layer to the adjusted reflector. Then the support with supporting Poland into a defined level - related to the plane the Dreipunktaufage becomes and/or. to the reflector focus - opposite the reflector moved, in order to be able to connect the supporting poles with the top caps of the reflector. Subsequent one needs to become only the before aligned and with corresponding reference members provided lamp unit on the supporting poles fitted fixed in the reflector and with this connected, e.g. by clamps, welding or rivets. Thereby a pedantic arranging procedure in various space coordinates is unnecessary with the incorporation of the lamp unit into the reflector. Es ist auch möglich, die Lampeneinheit an den erwähnten Bezugspunkten mit einer Vorrichtung zu fassen, die in eine vorgegebene Lage zu den im Reflektor eingebauten Stützpole gebracht wird, wonach die Stützpole mit den Halterungsansätzen der Lampeneinheit, z.B. by stop welding, connected become. The approaches at the support members can become so narrow held that they do not cause significant light losses of the

headlight.

Bei einer Ausführungsform des Verfahrens nach der Erfindung wird nach dem Aufsetzen der Halterungselemente auf den Quetschfuss die Lampeneinheit sowohl in einer der Reflektoröffnung entsprechenden Bezugsebene als auch in einer dazu senkrechten Richtung ausgerichtet und dann mit den Referenzgliedern versehen.

The alignment of the lamp unit in to the reference plane the perpendicular direction can be void in accordance with a favourable development of the method after the invention, if on the squeezing foot of the incandescent lamp with the squeezing procedure cam and/or. rillenförmige deformations mounted will lie, in a predetermined distance of () the Glühwendel (n) and as high points of reference for on the squeezing foot those which can be clamped, with corresponding recesses and/or. Expressing provided support members serve, on which after putting the support members on on the squeezing foot the lamp unit in one will provide the reflector opening corresponding reference plane aligned and then with the reference members.

The creation of high points of reference on lamp squeezing feet is actual from the DE-OS 27 41 959 known.

If the approaches of the support members become formed as strips extending transverse to the squeezing foot and the front ends of the Stützpqle as rectangular bent supports, incisions punched can and/or in accordance with a preferred embodiment of the invention after aligning the lamp unit as reference members from the approach touch. Lobes out-bent become, which cooperate with corresponding members of the supporting pole editions.

Become the approaches of the support members as first separate parts provided with an hole as reference member and the front ends of the supporting poles appropriate into the holes either as Abkröpfungen and/or. Bending drahtförmiger supporting poles or as hollow rivet-like formations of flat supporting poles formed, then can become after an other embodiment of the invention after aligning the lamp unit the beginning parts at the support members, preferably by welding, provided with the hole, fixed.

Some embodiments of the invention become now more near explained on the basis the drawing. Show: Fig. 1 a lamp unit, existing from halogen a lamp with two support members, which is certain to the receptacle into a reflector of an headlight, Fig. 2 in the left part a cross section by the lamp unit after Fig. 1 along the line II-II and in the right part a plan view on the lamp unit of the Fig. 1, Fig. 3 the side elevation one with the lamp unit after Fig. 1 used mounting plate element in enlarged yardstick, Fig. 4 eine plan view on the support member after Fig. 3, Fig. 5 the lamp unit after Fig. received into a reflector of an headlight. 1, Fig. 6 one of the here used supporting poles in perspective view, Fig. 7 an other lamp unit, existing from a halogen lamp with support members with different approaches, which to receptacle -

into a reflector of an headlight certain is, Fig. 8 in the left part a cross section by the lamp unit after Fig. 7 along the line VIII-VIII and in the right part a plan view on the lamp unit of the Fig. 7, Fig. 9 the side elevation one with the lamp unit after Fig. 7 used Halterungselementes in enlarged yardstick, Fig. 10 a plan view on the support member after Fig. 9, Fig. 11 the lamp unit after Fig. 7, received into a reflector of an headlight. 7, Fig. 12 a plan view on the lamp unit after Fig. 11, whereby the approaches of the support members and the supporting poles are in enlarged yardstick shown, Fig. 13 an other lamp unit, existing from a halogen lamp with support members with different approaches, which is certain to the receptacle into a reflector of an headlight, Fig. 14 in the left part a cross section by the lamp unit after Fig. 13 along the line XIV-XIV and in the right part a plan view on the lamp unit of the Fig. 13, Fig. 15 the side elevation one opposite Fig. 13 of somewhat modified mounting plate element in enlarged yardstick, Fig. 16 a plan view on the support member after Fig. 15, Fig. 17 a lamp unit similar after Fig. 7, received into a reflector of an headlight. 13, Fig. 18 an enlarged cross section by a cutout XVIII from Fig. 17, Fig. 19 an enlarged cross section by a cutout XIX from Fig. 17, Fig. 20 the side elevation of another with the lamp unit after Fig. 17 of applicable mounting plate element in enlarged yardstick, Fig. 21 a plan view on the support member after Fig. 20.

With the lamp unit after the Fig. 1 used halogen lamp 1 e.g. possesses one. from quartz existing bulb 2, which is with a squeezing foot essentially rectangular in the cross section 3 provided and with an halogen gas filled. In the bulb 2 two Glühwendeln are 4 and 5 parallel next to each other arranged. With 6 are itself the current feed wires referred located inside the incandescent lamp 1, which by the squeezing foot 3 passes through and whose extensions 7 down from the squeezing foot 3 stand out.

During the squeezing procedure 3 nockenförmige deformations are 8 mounted on the squeezing foot, which lie in a predetermined distance of the Glühwendeln 4 and 5 and serve as high points of reference for two 3 support members 9 which can be clamped on the squeezing foot, which with itself 3 approaches 10 striped extending transverse to the squeezing foot are provided (Fig. 3 and 4).

For this e.g. point. from spring steel of existing clammy-like support members 9 in each case a recess 11 up, which snatch with the Aufklemmen of the support members 9 on the squeezing foot 3 over its nockenförmige deformations 8 and thus the distance between the Glühwendeln 4 and 5 and the beginning strip 10 of the support members 9 determine. The two outside current feed wires 6 stand with their extensions 7 with the metallic support members 9 excellent from the squeezing foot 3, e.g. by welding, in electrical connection.

The so fabricated lamp unit is to the incorporation into a reflector 12 (Fig. 5) a closed headlight certain. This happens by two from flat material existing metallic supporting Poland 13, which become 12 fixed with their rear ends in capsule-shaped top caps 14 of the reflector and whose front ends are as rectangular bent supports 15 formed.

Zum Ausrichten der Lampeneinheit gegenüber dem Reflektor 12 wird die Lampeneinheit zunächst unabhängig vom Reflektor in einer quer zur Lampenachse liegenden Ebene verschoben, in der auch die Ansatzstreifen 10 liegen und die der fiktiven Ebene durch die abgebogenen Auflagen 15 der Stützpole 13 entspricht. During the orientation procedure at least one of the Glühwendeln 4 and 5 in operation set and the spiral outline becomes either electronic scanned on a projection screen enlarged projected or. By shifting the lamp unit in the mentioned plane then the Glühwendel becomes into it the pre-determined tolerance field brought.

After completion of the orientation procedure 9 in each case two incisions become 16 punched as reference members from the beginning strips 10 of the support members, which serve the Glühwendel as reference points for the layer approximately over supporting Poland 13 and thus opposite the Reflektor 12.

In this state the lamp unit as well as loose supporting Poland 13 with the headlight manufacturer supplied becomes. Here the loose supporting poles 13 become first opposite in Dreipunktauflage adjusted the reflector 12, like initially described, aligned and in its top caps 14, e.g. by solders, set. The supporting poles 13 possess in each case two out-bent lobes 17, which the incisions 16 serving as reference members the beginning strip 10 of the support members 9 fits at their front ends formed as rectangular bent supports 15. The lamp unit already aligned needs to become then only on the two supporting poles 13 in such a manner fitted that their lobe 17 into the incisions 16 engage. Then the lamp 1 with their Glühwendeln is 4 and 5 accurate 12 aligned opposite the reflector. Subsequent ones become the beginning strips 10 with supporting Poland 13 connected, which can take place either via stop welding or bending the lobes 17. Whereupon the middle extension 7a of the current feed wires 6 with a contact strip fixed in the middle top cap 14a becomes 18 connected.

Subsequent one becomes on the reflector 12 a transparent windshield applied and the interior of the headlight with an inert gas filled, developed in such a way.

With the lamp units after the Fig. 7, 11, 13 and 17 used halogen lamp 1 for motor vehicle registration document throwers is similar constructed as the halogen lamp after the Fig. 1 and 5. The Glühwendeln 4 and 5 lie here however one behind the other in axial direction of the lamp, whereby the Glühwendel 4 the headlight low beam and the Glühwendel 5 the high beam generated co-operating with a dimmer cap 19. The squeezing feet 3 of the halogen lamps 1 after the Fig. 7, 11 and 13 is likewise provided with cam-like deformations 8, while on the squeezing feet 3 to up-wedge the support members exhibit 9 corresponding recesses 11.

Thereby again a defined headroom between the Glühwendel 4 and the support members becomes 9 achieved.

With the lamp unit after the Fig. 7 to 12 exhibits the legs of the clammy-like support members 9 two transverse standing tabs 20. After aligning the lamp unit in a plane located transverse to the lamp axle 20 wire parts bent to an eyelet become 21 in such a manner welded to these tabs that its eye holes serve 22 as reference members and thus as reference points for the layer of the Glühwendel opposite 4 supporting Poland 23 drahtförmigen in this case and thus opposite the Reflektor 12. The front ends of the supporting poles 23 are as into the eye holes 22 appropriate Abkröpfungen 24 formed (Fig. 11 and 12).

With the assembly of the headlight the supporting poles become 23 again first opposite the reflector 12 aligned and in its top caps 14 fixed.

The lamp unit with its drahtförmigen beginning parts of 21, already aligned, becomes then 23 fitted on the two supporting poles, whereby of them come themselves abgekröpfte ends 24 into the eye holes 22 engage and the beginning parts of 21 on transverse to the headlight axle the extending portions 25 of the supporting poles 23 to the support. Subsequent ones become the beginning parts of 21 with supporting Poland 23 welded.

Similar likewise drahtförmige beginning parts of 21 bent to eyelets become with the embodiment after the Fig. 13 and 14 used. They extend however with their surface in longitudinal direction of the lamp and become after aligning the lamp unit 1, 9 between itself from the basic sides 31 of the support members 9 connector lugs 26, preferably by welding, away extending, fixed. The eye holes 22 serve here again as reference members for the layer the Glühwendel 4 for a headlight reflector 12. The incorporation of this lamp unit into the reflector 12 becomes subsequent on the basis the Fig. 17 to 19 described.

The Fig. 15 and 16 points with the lamp unit to the Fig. 13 and 14 support member 9 with a practical u-shaped bent drahtförmigen beginning part of 27, likewise which can be used, whose U-opening serves 28 as reference member. With the embodiment after Fig. the squeezing foot 3 of the halogen lamp 1 deformations serving as high points of reference does not possess 17. Accordingly the support members exhibit 9 also no corresponding recesses. The support members 9 with their connector lugs 26 are rather nondirectional on the squeezing foot 3 up-clamped. Therefore the lamp unit 1.9 must become both in one the reflector opening corresponding horizontal reference plane and in one perpendicular direction aligned. Subsequent ones become already on the basis the Fig. 13 and 14 described drahtförmigen beginning parts of 21 again in such a manner between the connector lugs 26 welded that their eye holes serve 22 as reference members and thus as reference points for the layer opposite the Glühwendel supporting Poland.

As embodiments are in Fig. 17 two various supporting poles shown, once a drahtförmiger supporting pole 23 and once a supporting pole 33 fabricated from flat material. The drahtförmige supporting pole 23 possesses a bending 29, which intervenes in the eye opening 22 of the right beginning part of 21 and becomes with this by welding connected at its front

end (Fig. 19). The supporting pole 33 existing made of flat material exhibits a hollow rivet 30 at its front end, slid over which the left drahtförmige beginning part becomes 21 with its eyelet, on which the hollow rivet is umgebördelt (Fig. 18), whereby a fixed connection between the supporting pole 33 and the beginning part becomes 21 achieved. The supporting poles were 23 before and/or. 33, as on the basis the Fig. 5 and 11 already described, in the top caps 14 of the reflector 12 in aligned layer fixed.

In a similar way the lamp unit leaves itself after Fig. 13 in a headlight reflector holding.

For halogen lamps without squeezing foot deformations the Fig shows. 20 and 21 an other suitable support member 9, becomes 32 welded at whose basic side 31 after aligning the lamp unit in horizontal reference plane and perpendicular direction a eye-like wire part, whose eye opening serves 34 again as reference member for the supporting Poland of the headlight reflector.

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Patentansprüche: Verfahren zur Herstellung eines abgedichteten Scheinwerfers mit einem aus einem konkaven Reflektor und einer transparenten Frontscheibe bestehenden Aussenkolben, in dem eine Lampeneinheit angeordnet wird, bestehend aus einer Halogenglühlampe und zwei auf ihrem

Squeezing foot clamped metallic support members with lateral approaches, which on with their rear

Ends into capsule-shaped top caps of the reflector on increased supporting poles fixed become, to characterised in that those first draw support polarize (13; 23; 33) opposite the reflector (12) ausse arranges and becomes in its top caps (14) set, on which before at the approaches (10; 21; 27; 32) their support members (9) also as reference points for those Layer of the Glühwendel (4) opposite the front ends (15; 24; 29; 30) the supporting poles and thus opposite that

Reflector serving reference members (16; 22; 28; 34) provided lamp unit with these reference members on the supporting poles fitted and then with them connected becomes.

2. Process according to claim 1, thus gekenn draws that after putting the support members (9 on) on the squeezing foot (3) the lamp unit (1, 9) so probably in one the reflector opening corresponding

Reference plane and in one in addition perpendicular direction aligned and then with the reference members (16; 22; 28; 34) one provides.

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3. Process according to claim 1, characterised in that on the squeezing foot (3) of the incandescent lamp (1) with the squeezing procedure cam and/or. rillenförmige deformations (8) mounted become, in a predetermined distance of () the Glühwendel (n) (4; 5) liegen und als Höhenbezugspunkte für die auf dem Quetschfuss festzuklemmenden, mit entsprechenden Aussparungen (11) bzw.

Expressing provided support members (9) serve, on which after putting the support members on on the squeezing foot the lamp unit (1, 9) in one the reflector opening corresponding reference plane aligned and then with the reference members (16; 22; 28) one provides.

4. Process according to claim 3, characterised in that the approaches of the support members (9) as itself transverse to the squeezing foot (3) extending strips (10) and the front ends of the supporting poles (13) as rectangular bent supports (15) formed becomes and that after aligning the lamp unit as reference members from the beginning strips (of 10) incisions (16) punched and/or. Lobes out-bent become, which cooperate with corresponding members (17) of the supporting pole editions.

5. Process according to claim 2 or 3, characterised in that the approaches of the support members (9) as first separate with an hole (22; 28; 34) as reference member provided parts (21; 27; 32) and the front ends of the supporting poles either as Abkröpfungen (24), appropriate into the holes, and/or. Bending (29) drahtförmiger supporting poles (23) or as hollow rivet-like formations (of 30) flat supporting oils (33) formed will and that become fixed after aligning the lamp unit (1, 9) the beginning parts at the support members, preferably by welding, provided with the hole.